



**General Controls
by White-Rodgers**

B57 Midgitrol®

Combination Gas Valve
Model E

INSTALLATION INSTRUCTIONS

Operator: Save these instructions for future use!

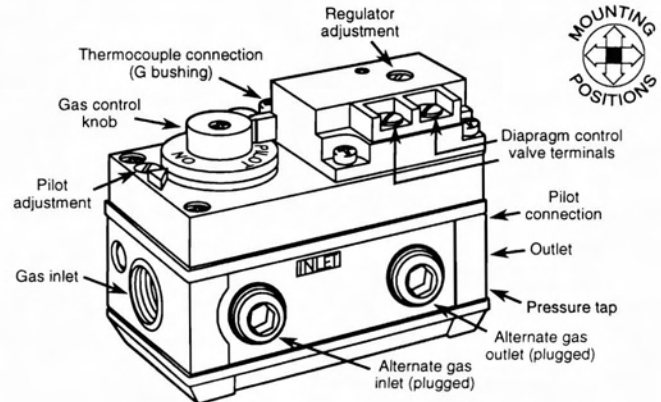
FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

DESCRIPTION

The B57 Model E Midgitrol® Combination Gas Valve provides all manual and automatic gas control functions required for gas-fired heating systems. B57 valves are intended for use with a continuous ignition source.

The B57 Midgitrol® features:

- Manual on-off control valve
- Thermomagnetic safety valve
- Internally-vented, diaphragm-type main valve
- Adjustable pilot gas supply
- Adjustable servo pressure regulator (B57R, B57S)



SPECIFICATIONS

Type of Gas: Use only with heating gases such as Natural, Mixed, Manufactured, LP and LP-Air mixtures

Pressure Regulator Setting:

Natural Gas: 3.0 to 6.0" W.C.

LP Gas: 9.0 to 12.0" W.C.

Ambient Temperature: 32° to 175°F (0° to 80°C)

Pressure Rating: 14" W.C. (½ PSI) max.

Electrical Rating: 24 VAC, 50/60 Hz, 3.9 VA

Anticipator Setting: 0.16 Ampere @ 24 VAC

Power to Thermomagnetic Safety Valve:

Millivolt, G Bushing thermocouple

Block Open Kit: To bypass the pressure regulating function of B57R valves, order Kit No. S113114A

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PRECAUTIONS

DO NOT BEGIN INSTALLATION UNTIL YOU READ THE FOLLOWING PRECAUTIONS.

⚠ WARNING



If you do not follow these instructions exactly, a fire or explosion may result, causing property damage, personal injury or loss of life.

1. Failure to turn off electric or main gas supply to heating system could cause personal injury and/or property damage by shock, gas suffocation, fire, and/or explosion.
2. Do not use this control on circuits exceeding specified voltage. Higher voltage will damage the control and may cause shock or fire hazard.
3. **NEVER USE FLAME OR ANY KIND OF SPARK TO CHECK FOR GAS LEAKS—COULD CAUSE FIRE AND/OR EXPLOSION.**
4. Do not use a control set for natural gas with LP gas, or a control set for LP gas with natural gas. Personal injury and/or property damage, gas suffocation, fire, and/or explosion may result.
5. Do not disassemble or attempt repair of this unit. Disassembly, reassembly or internal adjustment could cause valve to malfunction, resulting in personal injury, death, or property damage. If the control does not operate properly following **INSTALLATION** or **SERVICE**, replace the unit.

⚠ CAUTION

1. Do not short out terminals on gas valve or primary control to test. Short or incorrect wiring can cause equipment damage, property damage, and/or personal injury.
2. This control is not intended for use in locations where it may come in direct contact with water. Suitable protection must be provided to shield the control from exposure to water (dripping, spraying, rain, etc.).

MAIN PIPING CONNECTION

1. Turn off electrical power to the system at the fuse box or circuit breaker. Also turn off the main gas supply.
2. If replacing an existing valve, disconnect all plumbing and electrical connections from the old valve.
3. You should use new pipe that is properly chamfered, reamed, and free of burrs and chips. If you are using old pipe, be sure it is clean and free of rust, scale, burrs, chips, and old pipe joint compound.
4. Apply pipe joint compound (pipe dope) or teflon tape **that is approved for all gases, only to the male threads of the pipe joints. DO NOT** apply compound or teflon tape to the first two threads (see fig. 1 for typical piping connections).
5. If you are using a vise or open-end wrench to hold the valve while installing piping, do not tighten excessively, as this may damage the valve.
6. Connect the valve OUTLET to the main burner and the INLET to the gas supply line.

Multiple outlet valves are equipped with two inlets and three outlets for added versatility. Use a single inlet and outlet, and plug the unused ports. Be sure to apply a suitable pipe dope to the pipe plugs, and check for leaks with a soap and water solution.

NOTE

All piping must comply with local codes, ordinances, and/or national fuel gas codes.

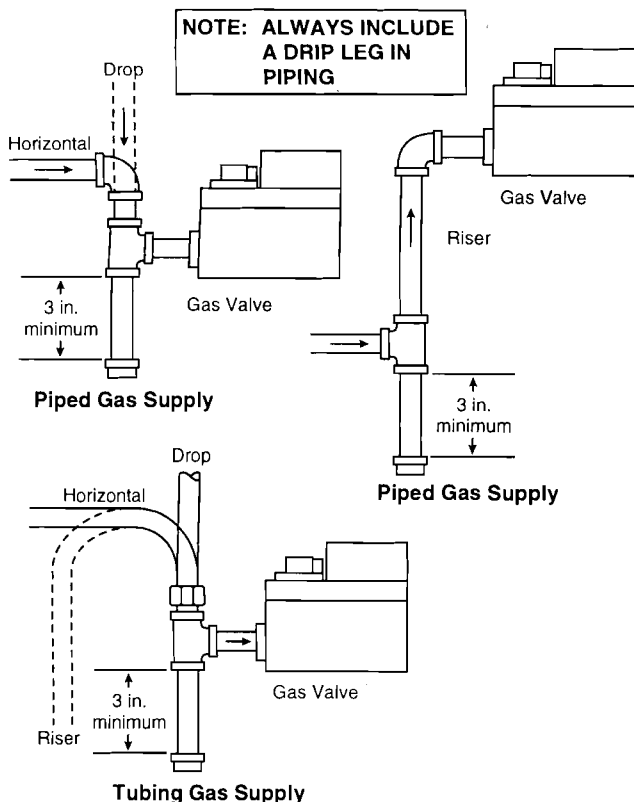


Figure 1. Typical gas valve piping

7. Fit pilot tubing between valve and pilot burner assembly. Use clean lengths of 1/4" tubing (copper tubing is not recommended). Remove any burrs on tubing ends. Do not kink piping. Thread compression fitting into the gas port marked PILOT until it is finger tight. Then slide tubing into compression fitting until it butts up against the port seat. While holding tubing in place, tighten the fitting (about 1 1/2 turns) for a gas tight seal.

NOTE

B57 valves are internally vented. Vent tubing is not required.

8. See **SYSTEM WIRING** when making electrical connections. Be sure that all wiring connections are clean and tight.
9. Thread the thermocouple bushing (G type) into the valve fingertight plus 1/4 turn.
10. If the thermostat is equipped with heat anticipation, set it to the ampere value on the valve label.
11. Adjust pilot gas flow for proper flame setting (see **ADJUSTMENT**).
12. After all gas and electrical connections are completed, turn gas on and check for gas leaks at both inlet and outlet with leak detection solution or soap suds. Bubbles forming indicate a leak. **SHUT OFF GAS AND FIX ALL LEAKS IMMEDIATELY.** Rinse off leak detection solution after all leaks are corrected.

SYSTEM WIRING

NOTE

Refer to and follow the appliance manufacturer's wiring diagram. Refer to fig. 2 for terminal identification.

All wiring should be installed in accordance with local and national electrical codes and ordinances.

Always check that the electrical power supply used agrees with the voltage and frequency shown on the gas control.

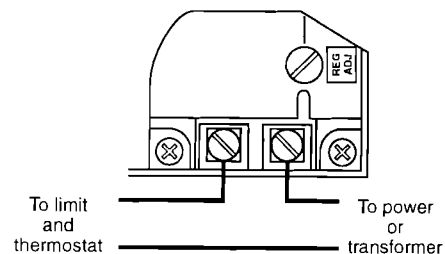


Figure 2. Gas valve wiring diagram

PILOT GAS ADJUSTMENT

Remove the cover screw (fig. 3) and turn the pilot adjustment screw to produce a stable blue flame covering the top of the generator cartridge.

To **REDUCE pilot pressure**, turn the pilot adjust screw (beneath the cover screw) clockwise. To **INCREASE pilot pressure**, turn the pilot adjust screw counterclockwise. Replace and tighten the cover screw.

PRESSURE REGULATOR ADJUSTMENT

All B57R valves are factory adjusted to the pressure value printed on the valve label. If another outlet pressure is required, follow these steps.

NOTE

If a valve has been factory-adjusted for the 3 to 6 inches W.C. range, it cannot be field-adjusted outside that range. This is also true for valves adjusted to the 9 to 12 inches W.C. range for LP gas.

1. Turn off gas supply and all electrical power to the system.
2. Attach a manometer to the $\frac{1}{8}$ " NPT outlet pressure tap near the outlet of the valve.
3. Turn on gas supply and system power and energize valve.
4. Remove regulator cover screw and turn regulator adjust screw **clockwise** (↻) to **increase pressure**, or **counterclockwise** (↺) to **decrease pressure** (see fig. 4). Always adjust regulator to provide the correct pressure according to the original equipment manufacturer's specifications listed on the appliance rating plate.
5. Replace regulator cover screw and tighten securely.
6. Turn off gas supply. Remove pressure measuring device and replace pipe plug and cap screw.
7. Turn on gas supply. Check for leaks with soap and water solution. Verify proper operation.

MILLIVOLTMETER TEST

Use a 0-to-50 millivolt scale to test the thermocouple. Place the meter test probes as shown in fig. 5. If the meter needle moves to the left of zero or not at all, reverse the probes. Take all readings with the pilot burning.

If the reading is less than 7 millivolts:

1. Adjust the pilot gas.
2. Clean the primary air holes.
3. Clean the pilot burner orifice.
4. Replace the thermocouple.

If the reading is 7 millivolts or more and the thermomagnet will not hold the safety valve open, replace the unit with an identical B57 Midgitrol® Valve.

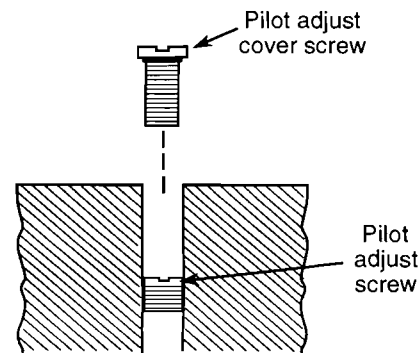


Figure 3. Pilot flame adjustment

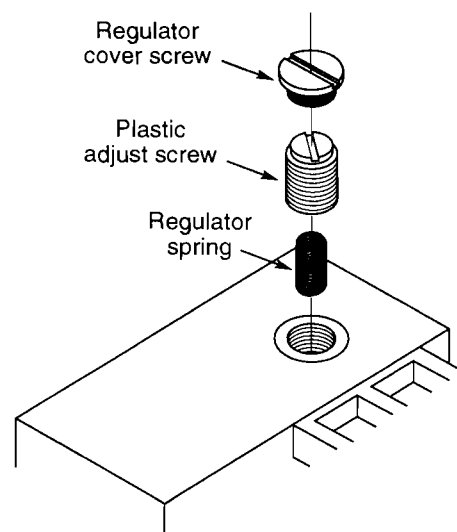


Figure 4. Pressure regulator adjustment

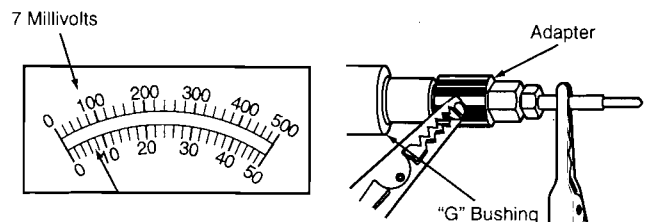


Figure 5. Millivolt test

SERVICE

NOTE

B57 Midgitrol® Valves are not user-serviceable except as instructed in this procedure.

If the system does not operate properly, check to be sure that:

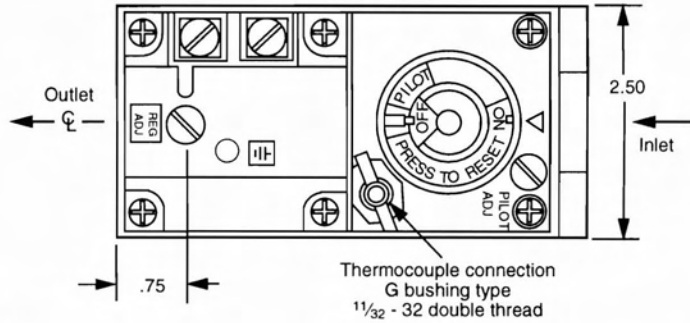
1. Specified power is properly connected and applied to the control.
2. The control dial is set to the proper position.

3. The pilot is properly adjusted (see **ADJUSTMENT**).
4. The pressure regulator, if provided, is set correctly (see **ADJUSTMENT**).
5. The pilot generator is providing sufficient millivoltage (see **MILLIVOLTMETER TEST**).

If the valve leaks or remains inoperable, replace the unit with an identical B57 Midgitrol® valve.

DIMENSIONS

Body Type	A	B	C	D	E
A	0.78 (20)	4.69 (119)	3.81 (97)	2.63 (67)	2.75 (70)
H	1.09 (28)	5.00 (127)	3.89 (99)	2.67 (68)	2.79 (71)



Downstream pilot outlet standard (upstream optional) 1/4" dia. tube compression fitting

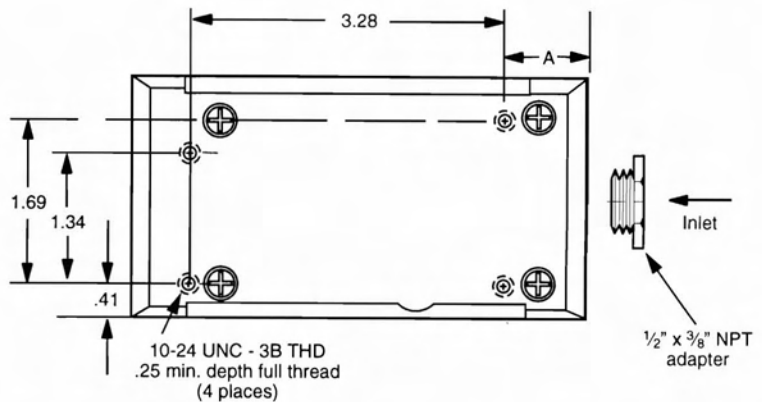
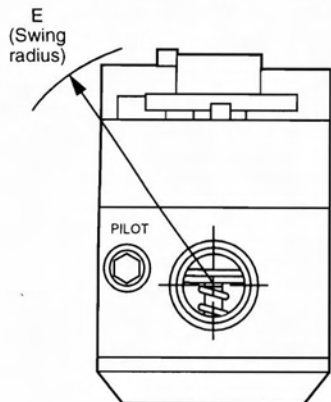
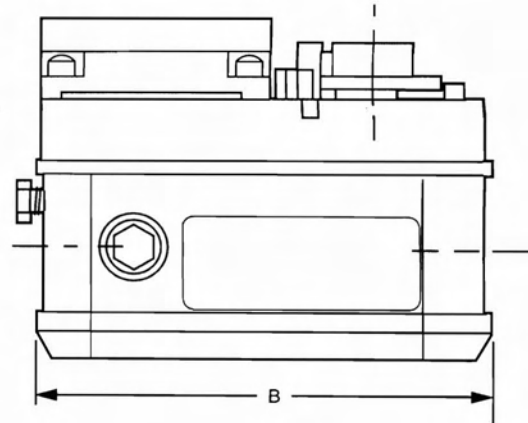
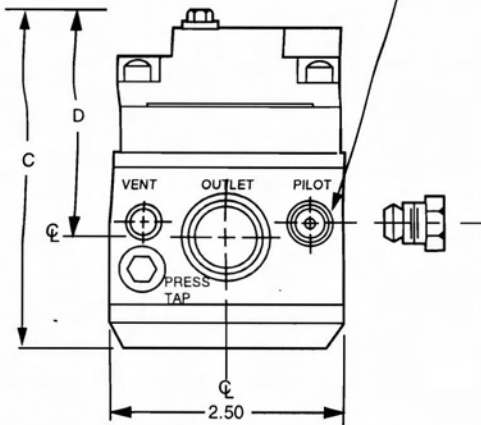


Figure 6. Dimensions – inches (millimeters)

PILOT LIGHTING INSTRUCTIONS AND PRECAUTIONS

FOR YOUR SAFETY READ BEFORE LIGHTING

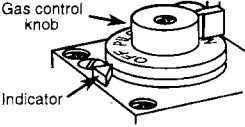
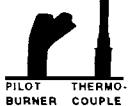
⚠ WARNING



If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- A. This appliance has a pilot that must be lighted by hand. When lighting the pilot, follow these instructions exactly.
- B. **BEFORE OPERATING** smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.
- FOR YOUR SAFETY
"WHAT TO DO IF YOU SMELL GAS"**
- Do not try to light any appliance.
 - Do not touch any electrical switch; do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- C. Use only your hand to push in or turn the gas control knob. **Never use tools.** If the knob will not push in or turn by hand, don't try to repair it; call a qualified service technician. Force or attempted repair may result in a fire or explosion.
- D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

LIGHTING INSTRUCTIONS

1. **STOP!** Read the precautionary information above.
 2. Set the thermostat to lowest setting.
 3. Turn off all electric power to the appliance.
 4. Depress gas control knob slightly and turn clockwise to **OFF** (see fig. 7). If knob is in **ON**, turn clockwise to **PILOT**, then depress knob slightly and turn clockwise to **OFF**.
 5. Wait fifteen (15) minutes to clear out any gas. If you then smell gas, **STOP!** Follow **B** in the precautionary information above. If you don't smell gas, go to the next step.
 6. Remove the pilot access panel(s) located under the gas control unit.
 7. Find pilot - follow small metal tubes from gas control.
 8. Turn knob on gas control counterclockwise to **PILOT**.
 9. Depress control knob all the way and hold in. **Immediately** light the pilot with a match. Continue to hold the control knob down for about one (1) minute after the pilot is lit. Release knob and it will pop back up. Pilot should remain lit. If it goes out, repeat steps 4, 5, 8, and 9.
 10. Replace pilot access panel(s).
 11. Turn gas control knob counterclockwise to **ON**.
 12. Turn on all electrical power to the appliance.
 13. Set thermostat to desired setting.
- 
- Figure 7. Gas control knob**
- NOTE: Knob cannot be turned from **PILOT** to **OFF** unless knob is depressed slightly. Do not use tools or excessive force.
- 

TO TURN OFF GAS TO APPLIANCE

1. Set the thermostat to lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Turn gas control knob clockwise to **PILOT**.
4. Depress gas control knob slightly and turn clockwise to **OFF**. **Do not use tools or excessive force.**

If you need more information about this product, please write to us at:

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